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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,323	12/12/2003	Tony Antakly	15814-1US-2 PSS:LB:lf	9102

20988 7590 10/03/2006

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EXAMINER	
KINSEY, NICOLE	

ART UNIT	PAPER NUMBER
1648	

DATE MAILED: 10/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/733,323	ANTAKLY ET AL.	
	Examiner	Art Unit	
	Nicole E. Kinsey, Ph.D.	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8 and 16-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8 and 16-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of the claims

Claims 1-4, 6-7, 9-12 have been withdrawn. Claims 8 and 16-21 are pending.

In accordance with 37 CFR 1.121 (Manner of making amendments in application), applicant is required to indicate the status of a claim as (Original), (Currently amended), (Canceled), (Withdrawn), (Previously presented), (New), or (Not entered). Claims 5, and 13-15 do not comply with 37 CFR 1.121. Correction is required.

Priority

The priority statement in the first paragraph of the specification should be updated to include the patent number of the parent application.

Specification

The use of the trademark APL™, Sephadex™, Savant™ Speed-vac and C-18™ column has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner, which might adversely affect their validity as trademarks.

Abstract

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 8 and 16-21 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Enablement is considered in view of the Wands factors (MPEP 2164.01(a)).

Nature of the invention. The claims are drawn to methods of preventing, treating and reducing Kaposi's sarcoma (KS) and/or HIV in AIDS patients.

State of the prior art. It is well known in the art and even to the general public that medical science, despite decades of intense searching, has not found any compound that can be credibly said to prevent KS or HIV infection in AIDS patients.

The difficulties inherent to developing a KS or HIV treatment or preventive are well known. For the sake of clarity, some of those problems are outlined here:

1) the extensive genomic diversity associated with HIV, due in large part to error prone reverse transcription of its RNA genome,

2) the fact that the modes of viral transmission include virus-infected mononuclear cells, which pass the infecting virus to other cells in a covert form (cell to cell transmission), as well as via free virus transmission,

3) the existence of latent forms of the virus,

4) the complexity and variation of the elaboration of the disease, and

5) the property of some portions of HIV proteins or peptides to actually cause immunosuppression or other detrimental consequences.

The existence of these obstacles prevents one of ordinary skill in the art from accepting any therapeutic regimen on its face given the intense interest in developing cancer and HIV treatments or preventatives and the lack of success in doing so.

Breadth of the claims. The claims are very broad, encompassing treating, reducing and preventing KS and HIV in AIDS patients.

Working examples. There is one example demonstrating decreased expression *in vitro* of HIV p24 in cells treated with fraction #7. However, the validity of this example is in question because there were no controls (i.e., HIV infected cells without treatment

with fraction #7 and uninfected control cells that were treated with fraction #7 to determine if fraction #7 is toxic to primary lymphocytes). One cannot determine if an active component of fraction #7 caused the decrease in p24 or if the decrease in p24 was due to fraction #7 toxicity (i.e., cell death). Further, there is no working example disclosed in the specification demonstrating the prevention, reduction or treatment of KS or HIV infection *in vivo*.

Guidance in the specification. The claimed invention is directed to a method for treating, reducing or preventing KS or HIV in AIDS patients. The method is not strictly limited to *in vitro* treatments and encompasses treating infected patients. There is insufficient disclosure to reasonably predict that the methods and compositions of the instant specification would treat, reduce or prevent KS or HIV *in vivo*. Applicants have only shown cell culture data, not treating infected patients or showing an art recognized correlation between the data shown and the scope of the claimed invention. The artisan would recognize and appreciate that an *in vitro* assay cannot duplicate the complex conditions of *in vivo* therapy. In the *in vitro* assay, the agent is in contact with cells during the entire exposure period. This is not the case *in vivo* where exposure to the target site may be delayed or inadequate. In addition, variables such as biological stability, half-life, or clearance from the blood are important parameters in achieving successful therapy. The composition may be inactivated *in vivo* before producing sufficient effect. In addition the composition may not reach the target cells because of its inability to penetrate tissues or cells. While the specification does contain statements regarding the use of the invention to prevent, treat or reduce KS or HIV infection in

AIDS patients, the specification fails to teach or describe such use. Applicants have not provided any evidence in the instant specification that the disclosed compounds/compositions can prevent, treat or reduce KS or HIV in AIDS patients. There are no specific teachings in the disclosure that would allow one to have a reasonable expectation of success in transferring the *in vitro* method to treat infected patients or to prevent KS or HIV infection. One is left with speculation and an invitation to experiment.

Furthermore, claim 8 is drawn broadly to "a biologically active compound comprising a protein and/or fraction thereof isolated from a biologically active fraction of APL™-HCG." There is no characterization or description of this compound with regard to structure, weight, length, properties, etc. to let the skilled artisan know he/she was in possession of the compound. Therefore, a great amount of undue experimentation would be required to isolate this "active compound."

For the reasons discussed above, it would require undue experimentation for one skilled in the art to use the claimed methods. Therefore, the claimed invention lacks an enabling disclosure.

Claims 8, 16 and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 8 is drawn to a method where a composition comprising a therapeutically effective amount of at least one compound having anti-KS and/or anti-HIV activity and comprising a biologically active compound comprising a protein and/or fragment thereof isolated from a biologically active fraction of APL™-HCG. Although the specification describes compositions comprising a compound having anti-KS and anti-HIV pharmaceutical activity, which comprises the HCG-like inhibitory protein of SEQ ID NO: 1 or 4 in association with a pharmaceutically acceptable carrier, there is no description of any other active protein that might be isolated from a biologically active fraction of APL™-HCG. A person skilled in the art, at the time the application was filed, would not have recognized that applicants were in possession of the invention as claimed.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 8 and 16-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 is drawn to a method where a composition comprising a therapeutically effective amount of at least one compound having anti-KS and/or anti-HIV activity and comprising a biologically active compound comprising a protein and/or fragment thereof isolated from a biologically active fraction of APL™-HCG. It is not clear if the claim is drawn to a composition containing one active component having anti-KS and anti-HIV pharmaceutical activity, which comprises an HCG-like inhibitory protein or to a

composition containing two active components where the first component is a compound having anti-KS and/or anti-HIV activity and the second component is a biologically active compound comprising a protein and/or fragment thereof isolated from a biologically active fraction of APL™-HCG.

Claim 8 contains the trademark/trade name APL™-HCG. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe hCG and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 8 and 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schwarz (WO 97/14428) in view of Lunardi-Iskandar et al. (U.S. Patent No. 5,677,275; "the '275 patent"), Lunardi-Iskandar et al. (Nature, vol. 375, 1995) and Gill et al.

Schwarz teaches a method for treating Kaposi's sarcoma using a composition comprising a therapeutically effective amount of at least one compound having anti-KS and/or anti-HIV activity and comprising a biologically active compound comprising a protein and/or fragment thereof isolated from a biologically active fraction of HCG (see whole document and claims 1-5). In addition, Schwartz discloses that impurities contained in hCG preparations, hCG fragments or degradation products which do not bind to the hCG receptor and do not exert hCG-like biological activity are responsible for the *in vivo* and *in vitro* activities found by Lunardi-Iskandar (page 2, lines 25-29; page 3, lines 22-26; and Example 2-Inhibition of Kaposi's sarcoma cell lines by impure hCG as opposed to non-inhibition by purified recombinant hCG). Schwartz also discloses the use of hCG fragments or degradation products, which do not bind to the hCG receptor and do not exert hCG-like biological activity for the treatment of Kaposi's sarcoma (page 3 lines 3-5). Schwarz used a commercial source of clinical grade hCG obtained from Sigma. Schwarz did not use APL™-HCG.

It would have been obvious to one of ordinary skill in the art to modify the methods taught by Schwarz to use APL™-HCG as another source of hCG. One would have been motivated to do so, given the suggestion by Schwarz that hCG fragments or degradation products which do not bind to the hCG receptor and do not exert hCG-like

biological activity are responsible for the *in vivo* and *in vitro* activities found by Lunardi-Iskandar. Lundardi-Iskandar teaches the use of hCG from Wyeth-Ayerst (APL™-HCG), Organon, Inc. (Pregnyl™) and Serono Laboratories, Inc. (Profasi™) (col. 8, lines 36-44 of '275 patent and page 65, Table 1 of Lunardi-Iskandar et al.). There would have been a reasonable expectation of success, given the knowledge that others have used APL™-HCG from Wyeth-Ayerst to treat successfully Kaposi's sarcoma (see Lunardi-Iskandar et al.-the '275 patent, Lunardi-Iskandar et al. (Nature, vol. 375, 1995) and Gill et al.). Further, as the composition of Schwarz is the same as recited in applicant's claims (i.e., hCG-like proteins that do not bind to the hCG receptor and do not exert hCG-like biological activity), the composition of Schwarz would also contain the same components/proteins with the same properties (i.e., polypropylene adsorbing properties) as those claimed by applicant. Thus the invention as a whole was clearly prima facie obvious to one of ordinary skill in the art at the time the invention was made.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicole E. Kinsey, Ph.D. whose telephone number is (571) 272-9943. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bruce Campell can be reached on (571) 272-0974. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nicole E Kinsey, Ph.D.
Examiner
Art Unit 1648

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